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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,508	10/15/2004	John G Santobianco	FCS-7371	4199

7590 04/03/2007
Albemarle Corporation
Law Department
451 Florida Street
Baton Rouge, LA 70801-1765

EXAMINER

BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
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1711

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/511,508		SANTOBIANCO ET AL.	
	Examiner		Art Unit	
	Susan W. Berman		1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

The rejection of claim 11 under 35 U.S.C. 112, second paragraph, is withdrawn.

Response to Arguments

The rejection of claims over the disclosure of EP 0 197 616 is withdrawn in order to simplify the issues. EP '616 does not clearly disclose compositions comprising dimaines as reducing agent in combination with a long chain amine of the prior art.

New grounds of rejection under 35 USC 102(b) are set forth herein.

Applicant's arguments filed 01-19-2007 have been fully considered but they are not fully persuasive.

With respect to claim 3, applicant's arguments that claims are read in view of the specification is unpersuasive because claim language is given the broadest possible meaning in view of the disclosure. Limitations from the specification are not read into claims that do not recite said limitations.

Henne et al: Applicant argues that the teaching that species having long alkyl chains are effective activators is not found in Henne et al. This argument is not persuasive because the amines taught by Henne et al are long chain amines and are specifically taught as being effective as activators. The disclosure of Henne et al is not limited to preferred embodiments. Henne et al clearly teaches that the alkyl groups can contain from 1 to 6 carbon atoms.

Dart et al: Applicant argues that Dart et al teach primary, secondary and tertiary amines, including unsaturated amines, as well as phosphines as reducing agents. Applicant claims tertiary diamines having alkyl groups and no unsaturated groups. Applicant argues that Dart et al do not

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provide any motivation to select tertiary amines. Dart et al clearly teach that amines are preferred reducing agents (column 5, lines 36-38). Table 1 shows that the tertiary amine has the faster gel time compared with primary and secondary amines.

Specification

The disclosure is objected to because of the following informalities: On page 1, the underlining under the title creates extraneous lines. A clean copy is required.

Appropriate correction is required.

The abstract of the disclosure is objected to because it is a copy of the front page of the corresponding PCT publication and not printed on a separate sheet. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3: the phrase “mixture of at least two photopolymerizable monomers” fails to set forth what kinds of photopolymerizable monomers are in the mixture. The claim should clearly recite at least two different kinds of photopolymerizable monomers if applicant intends to claim a mixture. The claim language, as written, reads on a mixture of methylmethacrylate monomers, for instance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 12-19, 21 and 35-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Eichler et al (4,434,035). Eichler et al disclose mixtures of aromatic-aliphatic ketones as photoinitiators, including a Type I hydroxyalkylphenone and a Type II thioxanthone, for photopolymerization of ethylenically unsaturated compounds. Eichler et al teach that it is advantageous to add a reaction accelerator and that amines are particularly suitable. The disclosed amines include tertiary amines such as octyldimethylamine and dodecyldimethylamine as being particularly preferred (column 6, line 66, to column 7, line 4). Light sources and paper coatings are taught in column 7, lines 30-45. Disclosed compositions wherein the reaction accelerator is a long chain tertiary amine anticipate the instantly claimed compositions.

Claims 1-7, 9, 12-22 and 35-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Henne et al (4,666,952). Henne et al disclose photopolymerizable compositions comprising photopolymerizable compounds, a photoinitiator and a tertiary amine of formula (I) set forth in the Abstract. In the formula each of the R^1 , R^2 , R^3 , R^4 and R^5 can be unsubstituted alkyl. When any of R^1 , R^2 , R^4 , R^5 is methyl or ethyl and the group $-CH_2-C(R_1R_2)-CH_2-R^3$ contains 8 or more carbon atoms wherein R^3 is an unsubstituted alkyl group, the amines disclosed by Henne et al correspond to the definition set forth in instant claim 1. Each of R^1 and R^2 can be an alkyl group

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of 6 carbon atoms, thus providing an alkyl group of 8 carbon atoms bonded to the N in the amines disclosed (column 2, lines 56-59). Alpha-cleavage photoinitiators and hydrogen abstraction photoinitiators are taught in columns 4-5. Dyes and pigments are taught in column 8, lines 22-30. Coatings of paper substrates are taught in column 8, lines 35-40. With respect to claim 9, Henne et al includes a maximum total of 28 carbon atoms when one of the R is ethyl in the disclosed formula.

Claims 1, 3, 5-7, 9, 12-14, 17, 18, 21-30, 35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Dart et al (4,071,424). Dart et al disclose compositions comprising photopolymerizable materials, a Type II photoinitiator and at least one reducing agent. The reducing agents disclosed include amines containing $C_{1 \text{ to } 10}$ alkyl groups, including a long chain fatty acid amine $C_{18}H_{37}N(CH_3)_2$ (column 5, lines 29-62). Diamines are taught in column 6, lines 15-49. Pigments, UV or VIS light cure, films and shaped articles are taught in column 9, lines 1-19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 12-19, 21 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichler et al (4,434,035). Eichler et al disclose mixtures of aromatic-aliphatic

ketones as photoinitiators, including a Type I hydroxyalkylphenone and a Type II thioxanthone, for photopolymerization of ethylenically unsaturated compounds. Eichler et al teach that it is advantageous to add a reaction accelerator and that amines are particularly suitable. The disclosed amines include tertiary amines such as octyldimethylamine and dodecyldimethylamine as being particularly preferred (column 6, line 66, to column 7, line 4). Light sources and paper coatings are taught in column 7, lines 30-45.

It would have been obvious to one skilled in the art at the time of the invention to select a long chain tertiary amine as reaction accelerator in the compositions disclosed by Eichler et al. Eichler et al provide motivation by teaching that tertiary amine are the preferred reaction accelerators and by specifically disclosing octyldimethylamine and dodecyldimethylamine as suitable tertiary amines. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of providing an effective initiating system and a rapid cure.

Claims 1, 3, 5-7, 9, 12-14, 17, 18, 21-30 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dart et al (4,071,424). Dart et al disclose compositions comprising photopolymerizable materials, a Type II photoinitiator and at least one reducing agent. The preferred amine reducing agents disclosed include amines containing C_{1 to 10} alkyl groups (column 5, lines 29-62). Diamines are taught in column 6, lines 15-49. Pigments, UV or VIS light cure, films and shaped articles are taught in column 9, lines 1-19.

It would have been obvious to one skilled in the art at the time of the invention to employ a mixture of amine reducing agents including a long chain alkyl amine and a diamine

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taught by Dart et al in the disclosed compositions. Motivation is provided by the disclosure of Dart et al that amines are the preferred reducing agents and that any of these amines is an effective reducing agent with the disclosed photoinitiators for photopolymerizing the compositions. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of successfully curing the compositions.

Allowable Subject Matter

Claims 10, 11, 31-34 and 41-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if the double patenting rejection set forth below is overcome by filing a terminal disclaimer. With respect to claims 31-34, the prior art cited herein and otherwise known to the examiner does not teach the specific combination of a long chain amine, such as dodecyldimethylamine, with one of the specified diamines and 2-hydroxy-2-methyl-1-phenylpropan-one as photoinitiator. With respect to claims 10, 11 and 41-44, the prior art does not teach compositions of claim 1 comprising the long chain alkylamines set forth.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

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Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-44 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of copending Application No. 11/210,712. Although the conflicting claims are not identical, they are not patentably distinct from each other because the compositions set forth in the instant claims encompass the compositions set forth in the claims of No '712 and vice-versa.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W. Berman whose telephone number is 571 272 1067.


The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB
3/24/07


Susan W Berman
Primary Examiner
Art Unit 1711